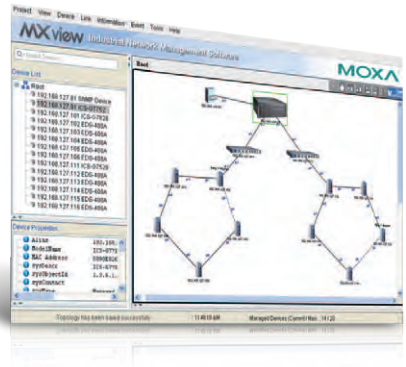

Industrial Network Security and Management

Industrial Network Security and Routers

Introduction: Industrial network security and routers 5-2
EDR-G903/G902 Series: Industrial secure routers with firewall/NAT/VPN 5-4
EDR-810 Series: 8+2G multiport industrial secure router with switch/firewall/NAT/VPN 5-6

Industrial Network Management

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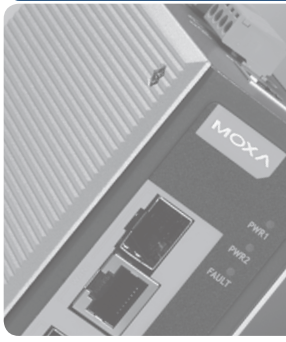
MXstudio: Industrial network management suite 5-9
MXconfig: Industrial network configuration tool 5-10
MXview: Industrial network management software 5-12

5

Industrial Network Security and Management



Introduction to Industrial Network Security and Routers

The convergence of IT and industrial automation networks has created tremendous opportunities, but also introduced network security to the world.

In industrial networks, security threats can originate both internally or externally and cause significant damage to remote automation systems, compromising staff safety and creating production losses. The EDR series utilizes Virtual Private Network (VPN) throughout public network for secure remote access to field devices and utilizes firewall for protection of mission critical infrastructure and assets.

The increasing complexity of industrial networks requires the segmentation of the network for different function zones. The EDR series can also perform as layer 3 routers for packet routing between WANs and multiple LANs.

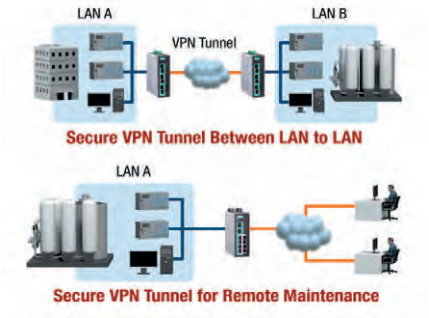
With industrial automation network convergence, data, voice and even video are now transmitting over the same media, which will require high-bandwidth connections to prevent network congestion. The EDR series provides non-stop communication for industrial automation networks with gigabit bandwidth, making industrial control systems more reliable and with lower total cost of ownership.

Enable Secure Industrial Automation Networks

VPN for Secure Remote Access

The EDR series' IPSec (Client/Server) and L2TP (Server) functions create secure, encrypted tunnels for secure remote access between industrial networks and remote locations, such as in water & wastewater, oil and gas, power, or intelligent transportation system networks.

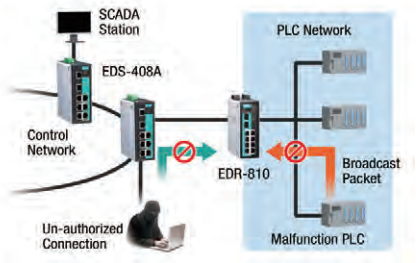
IPSec provides a secure tunnel between different LANs, such as the headquarters and remote sites. L2TP server provides secure communications between a roaming user and critical devices on the automation network.



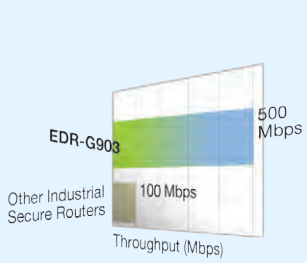
Firewalls for Critical Infrastructure Protection

The EDR series provide firewall protection for critical network devices such as PLCs, RTUs and DCS, to enable network isolation to avoid communication interruption between devices.

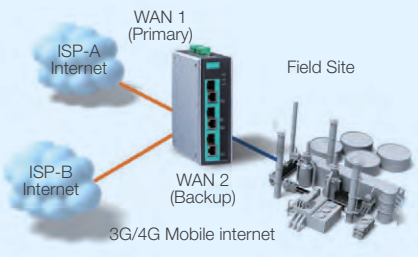
The high performance firewall prevents unauthorized connections from connecting with with critical devices without compromising network performance of legitimate traffic. In addition, the EDR series can protect and isolate the network when broadcast storm packets accumulate from a malfunctioning device.



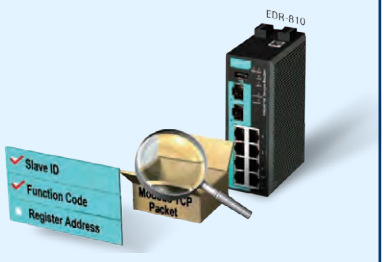
Tailored Design for Industrial Applications



High Speed Gigabit Performance



Dual WAN Port Redundancy



Built-in PacketGuard™ for Modbus TCP packets

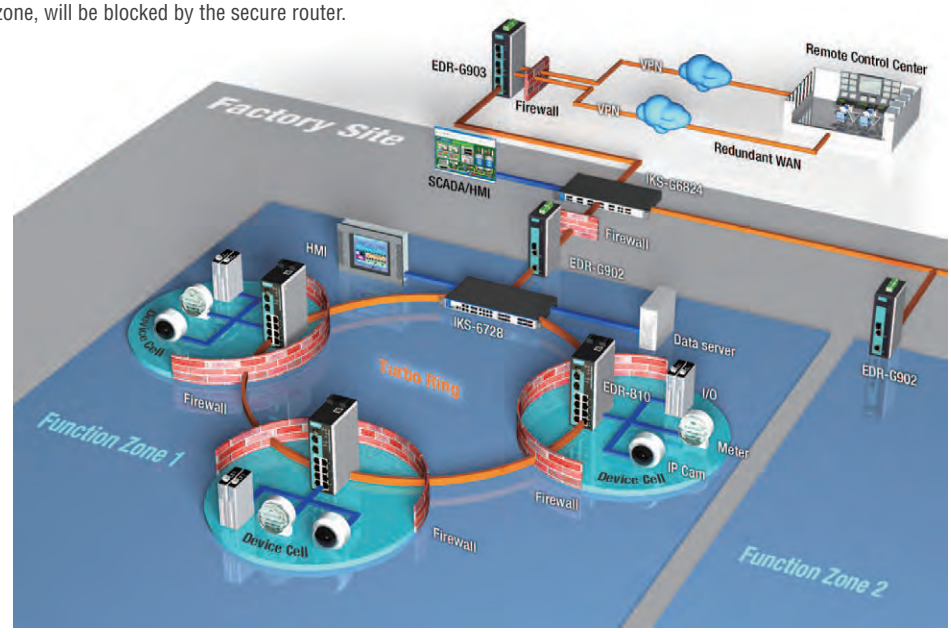
Layered Defense-in-Depth Cybersecurity for Automation

Recognizing the unique security challenges facing ICS networks, the American National Standards Institute (ANSI) and the International Society of Automation (ISA) have promulgated the ANSI/ISA-99 (IEC 62443) standards, which describe best practices for ICS security. Central to the ANSI/ISA-99 standard is the "zone and conduit" security model, which is implemented with a "defense-in-depth" strategy.

In the ANSI/ISA-99 model, ICS devices are segmented into independent "zones" composed of interconnected devices that work closely together to achieve a specific function. While communications within a zone are less restricted, different zones are required to communicate with each other through a single point called a "conduit," which is usually protected by a secure router or firewall. The conduits are robustly protected to only allow the specific data that is needed to coordinate the functions of the different zones. Any communications that are irrelevant to the function of a certain zone, such as http traffic to a Modbus TCP zone, will be blocked by the secure router.

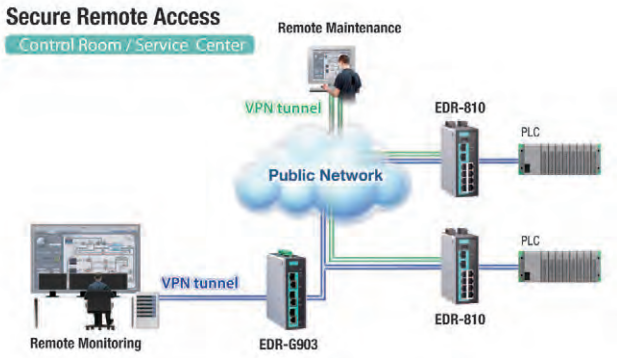
Moxa's portfolio of cyber security solutions includes: the EDR-G903, a high-performance secure router; the EDR-G902, a highly cost-effective secure router; and the EDR-810, an integrated router/switch solution. This complete portfolio allows you to deploy optimized cyber security coverage anywhere on the automation network at varied locations such as:

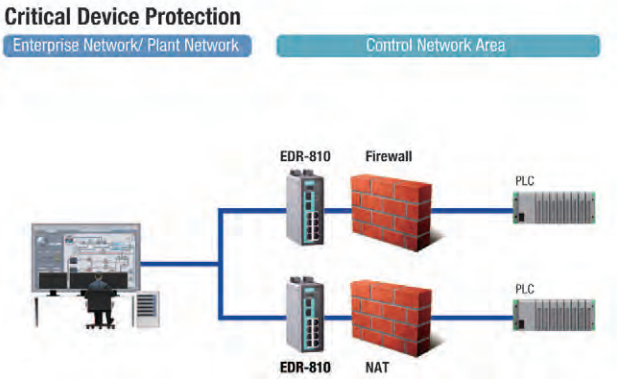
- **Factory Site:** Protecting the entire local site and securing remote data transmissions from the control centers.
- **Function Zone:** Protecting data transmissions from multiple device cells and critical devices.
- **Device Cell:** Protecting the data collected from multiple field devices, such as I/Os, meters, or IP cameras.



Secure Remote Access and Critical Device Protection

As an all-in-one firewall/NAT/VPN/router, the EDR series creates encrypted VPN tunnels between control rooms and remote sites. In addition, the built-in firewall/NAT functions prevent unauthorized access or broadcast storms caused by malfunctioning devices from damaging critical network devices, such as PLCs and DCS.





EDR-G903/G902 Series

Award-winning Product
TAIWAN EXCELLENCE 2011

Industrial secure routers with Firewall/NAT/VPN

- Firewall/NAT/VPN/Router all-in-one
- Secure remote access tunnel with VPN
- Protect critical assets with stateful firewall
- Inspect industrial protocol with PacketGuard technology
- Easy network setup with address translation (NAT)
- Dual WAN redundant interfaces through public networks
- Support for VLANs in different interfaces
- -40 to 75°C operating temperature range (T model)
- ISA99 / IEC 62443 / NERC CIP compliance

(EDR-G902)

Introduction

The EDR-G903/G902 series is a high performance, industrial VPN server with firewall/NAT all-in-one secure router. It is designed for Ethernet security applications in sensitive remote control or monitoring networks, and provides an Electronic Security Perimeter for the protection of critical cyber assets such as pumping stations, DCS, PLC systems on oil rigs, and water treatment systems. The EDR-G903/G902 series includes the following cyber security features:

- Virtual Private Networking (VPN): VPNs are designed to provide users with secure communication links when accessing a private network from the public Internet. Uses IPSec (IP Security) server or client mode for encryption and authentication of all IP packets at the network layer to ensure confidentiality and sender authentication.
- Firewall: Controls network traffic between different trust zones. Network Address Translation (NAT), which shields the internal LAN from unauthorized activity from outside hosts, is included.

The EDR-G903/G902's Quick Automation Profile function supports most common Fieldbus protocols, including EtherCAT, EtherNet/IP, FOUNDATION Fieldbus, Modbus/TCP, and PROFINET. Users can easily create a secure Ethernet Fieldbus network from a user-friendly web UI with a single click operation. In addition, Moxa's PacketGuard technology (Deep Packet Inspection) helps filtering Modbus TCP commands at OSI layer 7. The wide temperature models are available that operate reliably in hazardous, -40 to 75°C environments.

Specifications

Technology

Standards:
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X) and 100BaseFX
IEEE 802.3ab for 1000BaseT(X)
IEEE 802.3z for 1000BaseX
Protocols: SNMPv1/v2c/v3, DHCP Server/Client, TFTP, NTP, HTTP, HTTPS, Telnet, SSH, Syslog, SMTP, LLDP, PPPoE, PPTP, Dynamic DNS, QoS (Quality of Service)
Routing: Static routing, RIP V1/V2, VRRP
VLAN: 5 VLANs per interfaces (VLAN ID: 1 to 4094)
Flow Control: IEEE 802.3x flow control, back pressure flow control

Interface

WAN/WAN1: 1 RJ45/Fiber combo port
WAN2/DMZ: 1 RJ45/Fiber combo port
LAN:
EDR-G903: RJ45/SFP combo port
EDR-G902: RJ45
RJ45 Ports: 10/100/1000BaseT(X) auto negotiation speed
Fiber Ports: 100/1000BaseSFP slot
LED Indicators: PWR1, PWR2, FAULT, 10/100/1000M
Alarm Contact: One relay output with current carrying capacity of 1 A @ 24 VDC
Digital Inputs: 1 input
• +13 to +30 V for state "1"
• -30 to +3 V for state "0"
• Max. input current: 8 mA

Security Function

Firewall:
• Stateful inspection
• Filter: IP and MAC address, ports, ICMP, DDoS, Ethernet Protocols
• Bridge mode firewall
• Deep Packet Inspection on Modbus TCP
Quick Automation Profile: EtherCAT, EtherNet/IP, FOUNDATION Fieldbus, LonWorks, Modbus/TCP, PROFINET, IEC 60870-104, DNP, FTP, SSH, Telnet, HTTP, IPSec, L2TP, PPTP, RADIUS
NAT: N-to-1, 1-to-1, and port forwarding
VPN: IPSec (client/server), L2TP (server), PPTP (client), Max. 50 tunnels (EDR-G902) or Max. 100 tunnels (EDR-G903)
Encryption: DES, 3DES, AES-128/192/256
Authentication: Pre-shared key (PSK), X.509v3 certificates, MD5, SHA

Data Throughput:
EDR-G903:300 Mbps (40000 fps)
EDR-G902:150 Mbps (25000 fps)
VPN Throughput (AES-256, SHA-256):
EDR-G903: 150 Mbps
EDR-G902: 60 Mbps

Power Requirements

Input Voltage: 12/24/48 VDC (9.6 to 60 VDC), redundant dual inputs
Input Current: 0.53 A @ 24 V
Overload Current Protection: Present
Connection: Removable terminal block
Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal, IP 30 protection
Dimensions: 51 x 152 x 131.1 mm (2.01 x 5.98 x 5.16 in)
Weight: 1250 g
Installation: DIN-Rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:
Standard Models: 0 to 60°C (32 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95 % (non-condensing)

Standards and Certifications

Safety: UL 508
EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
EMS:
EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,
EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,
EN 61000-4-6 (CS) Level 3
Marine: DNV (EDR-G902)
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

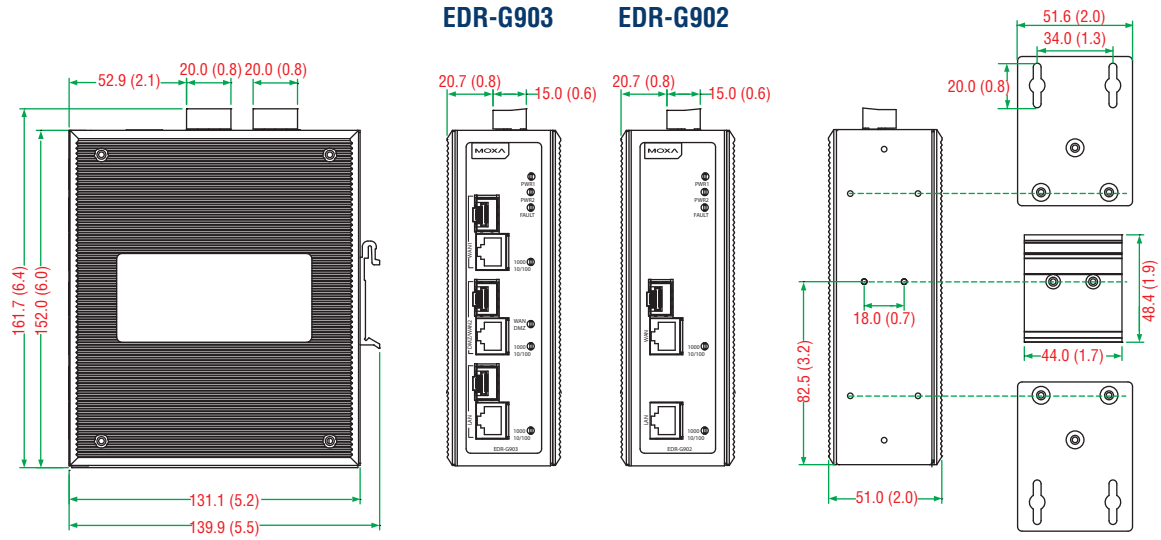
Time: 530,000 hrs
Database: Telcordia (Bellcore), GB

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Side View | Front Views | Rear View | DIN-Rail/Panel Mounting Kit

Ordering Information

Available Models

EDR-G903: Industrial secure router with 2 WAN/1 DMZ, and Firewall/NAT/VPN, 0 to 60°C operating temperature
EDR-G903-T: Industrial secure router with 2 WAN/1 DMZ, and Firewall/NAT/VPN, -40 to 75°C operating temperature
EDR-G902: Industrial secure routers with 1 WAN, Firewall/NAT/VPN, 0 to 60°C operating temperature
EDR-G902-T: Industrial secure routers with 1 WAN, Firewall/NAT/VPN, -40 to 75°C operating temperature
Note: The EDR-G903/G902 series secure routers support 100/1000BaseSFP slots. See pages 1-82 and 1-84 for information about SFP-1G/1FE series Gigabit/Fast Ethernet SFP modules.

Optional Accessories (can be purchased separately)

DR-4524/75-24/120-24: 45/75/120 W DIN-Rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN-Rail 24 VDC power supplies, -20 to 70°C operating temperature
WK-51-01: Wall mounting kit
RK-4U: 4U-high 19" rack mounting kit

Package Checklist

- EDR-G903/G902 secure router
- RJ45 to DB9 console port cable
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card

Award-winning Product

EDR-810 Series

8+2G multiport industrial secure router with switch/firewall/NAT/VPN

- 8+2G all-in-one Firewall/NAT/VPN/Router/Switch
- Build up secure remote access tunnel with VPN
- Protect critical assets by stateful firewall
- Inspect industrial protocol with PacketGuard technology
- Setup network easily by network address translation (NAT)
- RSTP/Turbo Ring redundant protocol enhances network redundancy
- -40 to 75°C operating temperature range (T model)
- ISA99 / IEC 62443 / NERC CIP compliance
- Check firewall settings with intelligent SettingCheck feature

Introduction

The EDR-810 is a highly integrated industrial multiport secure router with Firewall/NAT/VPN and managed Layer 2 switch functions. It is designed for Ethernet security applications in sensitive remote control or monitoring networks, and provides an electronic security perimeter for the protection of critical cyber assets such as pumping/treatment systems in water stations, DCS systems in oil and gas applications, and PLC/SCADA systems in factory automation. The EDS-810 series includes the following cyber security features:

- **Firewall/NAT:** Firewall policies control network traffic between different trust zones, and Network Address Translation (NAT) shields the internal LAN from unauthorized activity from outside hosts.
- **VPN:** Virtual Private Networking (VPN) is designed to provide users with secure communication tunnels when accessing a private network from the public Internet. Uses IPSec (IP Security) server or client mode for encryption and authentication of all IP packets at the network layer to ensure confidentiality and sender authentication.

The EDR-810's "WAN Routing Quick Setting" provides an easy way for users to set up WAN and LAN ports to create a routing function in 4 steps. In addition, the EDR-810's "Quick Automation Profile" gives engineers a simple way to configure the firewall filtering function with general automation protocols, including EtherNet/IP, Modbus TCP, EtherCAT, FOUNDATION Fieldbus, and PROFINET. Users can easily create a secure Ethernet network from a user-friendly web UI with a single click, and the EDR-810 is capable of performing deep Modbus TCP packet inspection. Wide temperature models that operate reliably in hazardous, -40 to 75°C environments, are also available.

Specifications

Technology

Standards:
IEEE 802.3 for 10BaseT
IEEE 802.3u for 100BaseT(X)
IEEE 802.3ab for 1000BaseT(X)
IEEE 802.3z for 1000BaseX
IEEE 802.1Q for VLAN tagging
IEEE 802.3ad for port trunk
Protocols: SNMP v1/v2c/v3, DHCP server/client, TFTP, NTP/SNTP server/client, HTTP, HTTPS, Telnet, SSH, IPSec, L2TP, IGMP v1/v2/v3, QoS/CoS/ToS, Radius, RSTP/STP, LLDP, DDNS
Routing: Static routing, RIP V1/V2, OSPF
Routing Redundancy: VRRP
Multicast Routing: Static, DVMRP, PIM-SM/SSM
Broadcast: IP directed broadcast, broadcast forwarding
Redundancy: STP/RSTP, Turbo Ring V2
Flow Control: IEEE 802.3x flow control, back pressure flow control

Interface

RJ45 Ports: 10/100BaseT(X) auto negotiation speed
Fiber Ports: 1000BaseSFP slot
Console Port: Web/telnet/SSH/CLI, and RS-232 serial console
RESET button: Reset to default settings
LED Indicators: STATE, PWR1, PWR2, FAULT, 10/100/1000M
Alarm Contact: One relay output with current carrying capacity of 1 A @ 24 VDC
Digital Inputs: 1 2-contact terminal block
• +13 to +30 V for state "1"
• -30 to +3 V for state "0"
• Max. input current: 8 mA

Security Function

Firewall:
• Stateful inspection
• Filter: IP and MAC address, ports, ICMP, DDoS, Ethernet Protocols
• Deep Packet Inspection on Modbus TCP
Quick Automation Profile: EtherCAT, EtherNet/IP, FOUNDATION Fieldbus, LonWorks, Modbus/TCP, PROFINET, IEC 60870-104, DNP, FTP, SSH, Telnet, HTTP, IPSec, L2TP, PPTP, RADIUS
NAT: N-to-1, 1-to-1, bidirectional 1-to-1, and port forwarding
VPN: IPSec (client/server), L2TP (server), PPTP (client), Max. 10 VPN tunnels (VPN model)
Encryption: DES, 3DES, AES-128/192/256 (VPN model)
Authentication: Pre-shared key (PSK), X.509v3 certificates, MD5, SHA

Data Throughput: 100Mbps (10000 fps)
VPN Throughput (AES-256, SHA-256): 17Mbps

Switch Properties

Max. Number of VLANs: 16
VLAN ID Range: 1 to 4094
IGMP Groups: 256

Power Requirements

Input Voltage: 12/24/48 VDC (9.6 to 60 VDC), redundant dual inputs
Input Current: 0.37 A @ 24 V
Overload Current Protection: Present
Connection: Removable terminal block
Reverse Polarity Protection: Present

Physical Characteristics

Housing: Metal
Dimensions: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
Weight: 830 g
Installation: DIN-Rail mounting, wall mounting (with optional kit)

Environmental Limits

Operating Temperature:
Standard Models: -10 to 60°C (14 to 140°F)
Wide Temp. Models: -40 to 75°C (-40 to 167°F)
Storage Temperature: -40 to 85°C (-40 to 185°F)
Ambient Relative Humidity: 5 to 95 % (non-condensing)

Standards and Certifications

Safety: UL 508
EMI: FCC Part 15 Subpart B Class A, EN 55022 Class A
EMS:
EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,
EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,
EN 61000-4-6 (CS) Level 3
Rail Traffic: EN 50121-4
Transportation: NEMA TS2
Shock: IEC 60068-2-27
Freefall: IEC 60068-2-32
Vibration: IEC 60068-2-6
Note: Please check Moxa's website for the most up-to-date certification status.

MTBF (mean time between failures)

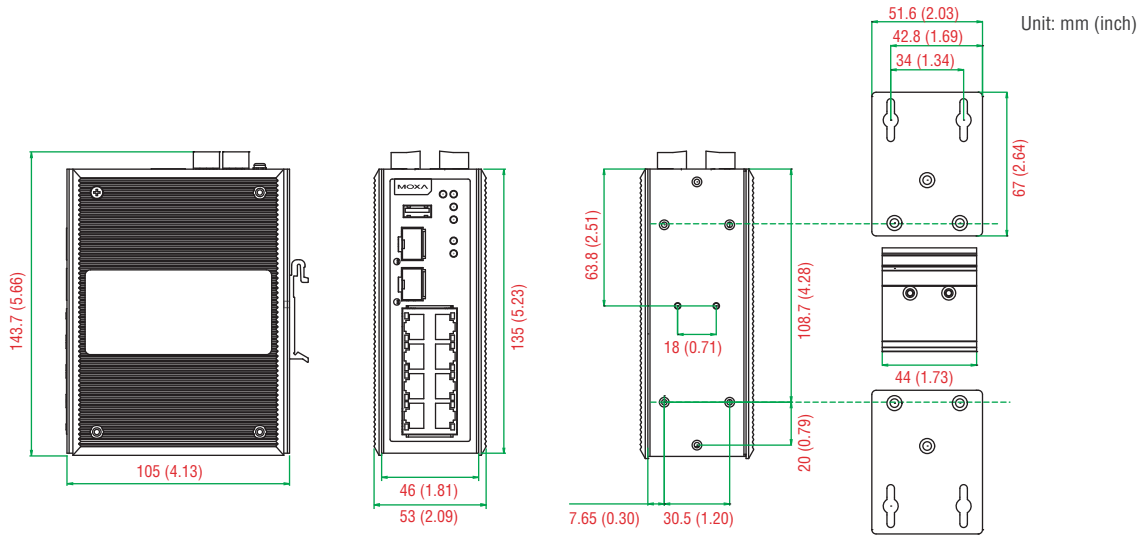
Time: 981,954 hrs
Database: Telcordia (Bellcore), GB

Warranty

Warranty Period: 5 years
Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Side View | Front View | Rear View | DIN-Rail/Panel Mounting Kit

Ordering Information

Available Models

EDR-810-2GSFP: 8+2G-port industrial multiport secure router with Firewall/NAT, -10 to 60°C operating temperature
EDR-810-2GSFP-T: 8+2G-port industrial multiport secure router with Firewall/NAT, -40 to 75°C operating temperature
EDR-810-VPN-2GSFP: 8+2G-port industrial multiport secure router with Firewall/NAT/VPN, -10 to 60°C operating temperature
EDR-810-VPN-2GSFP-T: 8+2G-port industrial multiport secure router with Firewall/NAT/VPN, -40 to 75°C operating temperature
Note: The EDR-810 series supports 1000BaseSFP slots. See the SFP-1G series Gigabit Ethernet SFP module product datasheet for more information.

Package Checklist

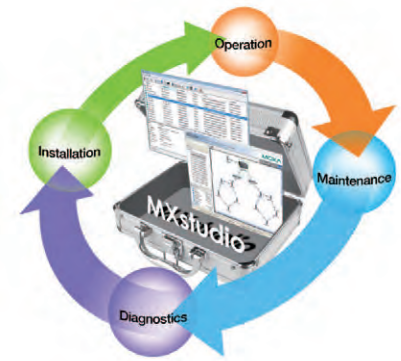
- EDR-810 industrial secure router
- RJ45 to DB9 console port cable
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card

Optional Accessories (can be purchased separately)

DR-4524/75-24/120-24: 45/75/120 W DIN-Rail 24 VDC power supplies
MDR-40-24/60-24: 40/60 W DIN-Rail 24 VDC power supplies, -20 to 70°C operating temperature
WK-51-01: Wall mounting kit
RK-4U: 4U-high 19" rack mounting kit
ABC-02-USB: Automatic Backup Configurator

Introduction to Industrial Network Management

Every industrial network has a lifecycle consisting of four basic stages: installation, operation, maintenance, and diagnostics. Even with careful network planning and design, network management throughout all four aspects of the industrial network lifecycle can still present many challenges for integrators and operators. To optimize network efficiency and minimize total cost of ownership, industrial automation networks need user-centric software tools for efficient network deployment, monitoring, management, maintenance, and troubleshooting.



Automation-friendly Software Throughout the Network Lifecycle

Installation

Challenge:
Initial configuration of network devices is generally done one at a time manually, which can require many hours of labor.

Solution:
Moxa's MXconfig, a network configuration tool, can mass-configure every device on the network, including IP settings, redundancy protocol, VLAN, and related managed functions, to significantly reduce the time required for configuration. With MXconfig, you can make configuration 10 times faster.

Operation

Challenge:
Without effective network management software, industrial operators are unable to monitor, identify, and react to network issues immediately, which can result in production losses and safety concerns.

Solution:
Moxa's MXview industrial network management software is a graphical platform that allows operators to easily monitor and manage an industrial network of up to 2000 nodes in real time. MXview auto-detects network devices and displays a virtual ring topology. MXview also supports smart visualization, which allows operators to see color-coded VLAN/IGMP settings, a virtual device panel, PoE power consumption, and high-accuracy port monitoring (up to 4 decimal places).

Maintenance

Challenge:
Changes to device settings can cause unexpected network issues. When this happens, backup files will need to be restored to a previous state. For a large-scale network, this task is extremely time-consuming and can lead to extended system downtimes.

Solution:
Moxa's MXview allows network operators to select a group of devices and export their configuration files simultaneously for backup, saving a significant amount of time.

Diagnostics

Challenge:
Without knowing where to look and what to actually look for, maintenance engineers can spend hours troubleshooting the network and still fail to find a solution.

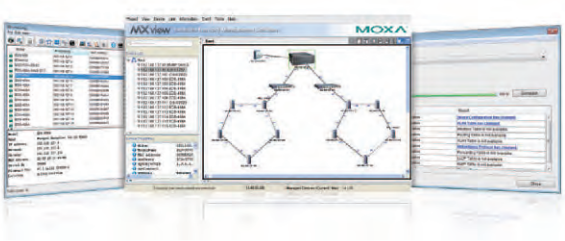
Solution:
Moxa's MXview offers a highly-intuitive event playback feature which can record network events, and replay past network incidents in the order they occurred. In addition, N-Snap industrial network snapshot tool can help collect device information. By comparing abnormal network data with healthy network data, N-Snap can help you troubleshoot the network more efficiently.

Integration with SCADA and Third-Party NMS

Moxa's industrial network management solutions supports built-in SNMP OPC server, which can convert SNMP information into OPC tags that can be seamlessly integrated into OPC-compatible HMI/SCADA systems. Moreover, our network management solutions can collaborate with third-party network management software, making it easier to monitor and maintain the high availability of larger-scale automation systems.

MXstudio

Industrial network management suite for installation, operation, maintenance, and diagnostics



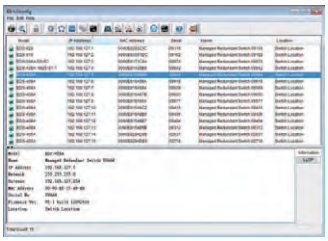
- **An all-in-one toolset for installation, operation, maintenance, and diagnostics stages of the network lifecycle**
- **MXconfig, MXview, and N-Snap for easy and quick industrial network management**
- **Maximized productivity with Moxa industrial Ethernet solutions**

Introduction

Moxa's MXstudio industrial network management suite combines all the tools you need throughout the network lifecycle into one toolbox, including MXview industrial management software, MXconfig industrial network configuration tool, and MXsnap industrial network snapshot tool. Whether it is for configuration, monitoring, maintenance, or troubleshooting, the all-in-one MXstudio software suite has a tool for every task. In addition, MXstudio's three key benefits, easy configuration, smart visualization, and quick troubleshooting, are designed to meet the demands of industrial automation networks.

MXstudio's Offerings

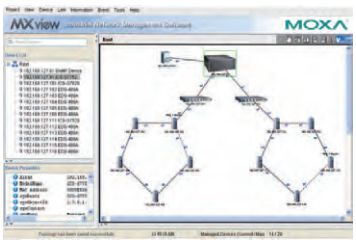
MXconfig Industrial Network Configuration Tool



- Mass configuration function to reduce setup time
- Topology analysis to eliminate manual setting errors
- Configuration overview for efficient management

See page 5-10 for details.

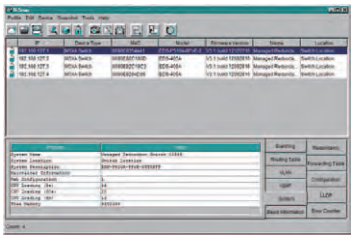
MXview Industrial Network Management Software



- Auto discovery of network devices and physical connections
- Event playback for quick trouble-shooting
- Color-coded VLAN/IGMP groups and other visualized network data

See page 5-12 for details.

N-Snap Industrial Network Snapshot Tool



- A standalone data collection tool to take network snapshots for quick troubleshooting
- Compare network and device data, and highlight the differences

System Requirements

CPU	2 GHz or faster dual core CPU
RAM	2 GB
Hard Disk Space	10 GB
OS	Windows XP Professional, Windows 7 (32/64-bit), Windows Server 2008 (32/64-bit)

Ordering Information

A free version is now available for download at Moxa's website.

Supported Devices

Detailed model names are available in each product datasheet. Or check Moxa's website for the most up-to-date information.

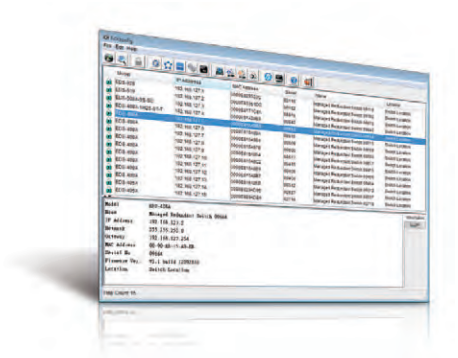
Award-winning Product

TAIWAN EXCELLENCE 2014

CONTROL ENGINEERING 2014 ENGINEERS' CHOICE AWARDS FINALISTS

MXconfig

Industrial network configuration tool



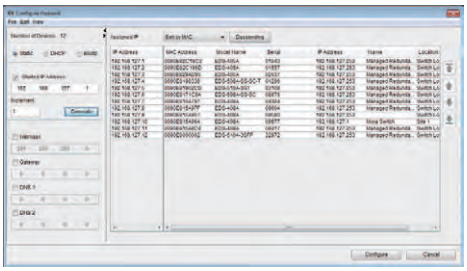
- Mass managed function configuration increases deployment efficiency and reduces setup time
- Mass configuration duplication reduces installation cost
- Link sequence detection eliminates manual setting errors
- Configuration overview and documentation for easy status review and management
- Three users privilege levels enhance security and management flexibility

Introduction

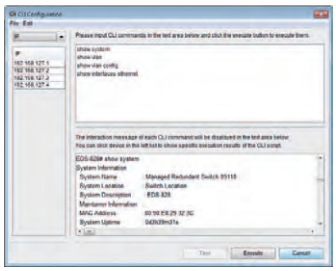
Moxa's MXconfig is a comprehensive Windows-based utility that is used to install, configure and maintain multiple Moxa switches in industrial networks. This suite of useful tools helps users set the IP addresses of multiple switches with one click, configure the redundant protocols and VLAN settings, modify multiple network configurations of multiple Moxa switches, upload firmware to multiple switches, export/import configuration files, copy configuration settings across switches, easily link to web and telnet consoles, and test device connectivity. MXconfig gives device installers and control engineers a powerful and easy way to mass configure devices, and effectively reduces the setup and maintenance cost.

Device Discovery and Fast Group Configuration

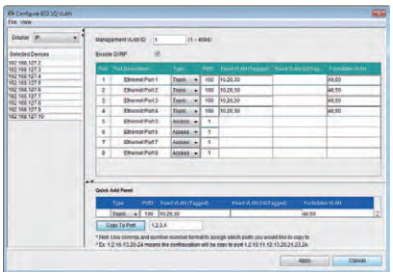
- Easy broadcast search of the network for all supported Moxa managed Ethernet switches
- Mass network setting (such as IP addresses, gateway, and DNS) deployment reduces setup time
- Mass managed functions deployment increases configuration efficiency
- User-friendly port selection panel provides physical port descriptions
- VLAN Quick-Add Panel speeds up setup time
- Deploy multiple devices with one click using CLI execution



Network Setting



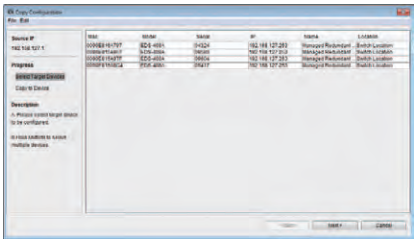
Execute CLI



Quick Add Panel

Fast Configuration Deployment

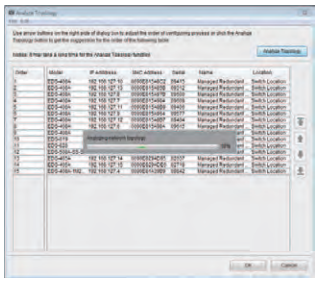
- Quick configuration: copy a specific setting to multiple devices and change IP addresses with one click



Copy Configuration

Link Sequence Detection

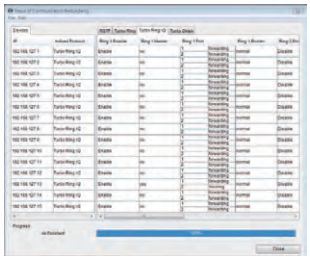
- Link sequence detection eliminates manual configuration errors and avoids disconnections, especially when configuring redundancy protocols or VLAN settings for a network in a daisy chain topology (line topology).



Analyze Topology

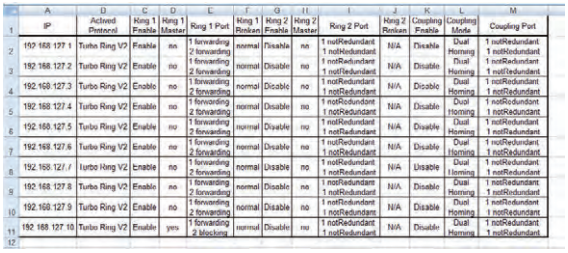
Configuration Overview and Documentation

- Useful mass status overview and configuration check for each managed function
- Generate reports on each managed function for multiple devices in the network



Status Overview

- Export multiple configuration files with flexible filenames and import configuration setting to multiple devices



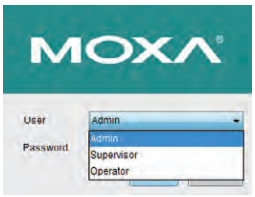
File Export

Unlock Devices and User Privileges

- Mass device unlocking and password file export for quick unlocks

Unlock Devices

- Three user privilege levels to enhance management flexibility and security: Admin, Supervisor, and Operator.



Three User Privilege Levels

System Requirements

CPU	2 GHz or faster dual core CPU
RAM	256 MB
Hard Disk Space	1 GB
Operating System	Windows XP, Windows 7 (32/64-bit), Windows Server 2008 (32/64-bit)

Supported Devices

MXconfig v1.2 supports the following devices:

Series	Model Name	Firmware
EDS Series	EDS-405A/408A	V3.1 or higher
	EDS-405A-EIP/408A-EIP/ 405A-PN/408A-PN	V3.1 or higher
	EDS-505A/508A/516A/ 510A/518A	V3.1 or higher
	EDS-608/611/616/619	V3.1 or higher
	EDS-728/828	V3.1 or higher
	EDS-G509	V3.1 or higher
	EDS-P510/P510A-8PoE/P506A-4PoE	V3.1 or higher
	EDS-G508E/G512E/G516E/510E	V4.0 or higher
IKS Series	IKS-6726/6728/6524/6526/6852	V3.1 or higher
	IKS-G6524/G6824	V3.1 or higher
	IKS-6726-8PoE	V3.1 or higher

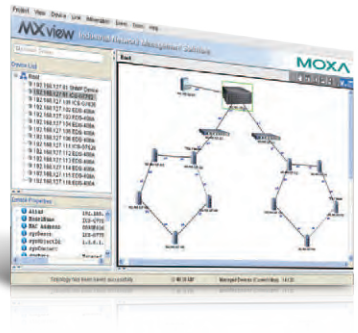
Series	Model Name	Firmware
ICS Series	ICS-G7526/G7528/G7826/G7828	V3.1 or higher
	ICS-G7748/G7750/G7752/G7848/G7850/ G7852	V3.1 or higher
IEX Series	IEX-402-SHDSL	V1.0 or higher
PT Series	PT-7528/7710/7728/7828/G7509/7728-PTP	V3.1 or higher
	PT-508/510	V3.1 or higher
TN Series	TN-5508/5510/5516/5518	V3.1 or higher
	TN-5508-4PoE/5510-PoE/5516-8PoE/ 5518-PoE	V3.1 or higher
	TN-5816/5818	V3.1 or higher

Note: Additional model names will be added in the near future. Please check Moxa's website for the most up-to-date information.

MXview

Award-winning Product
TAIWAN EXCELLENCE 2010

Industrial network management software designed for converged automation networks



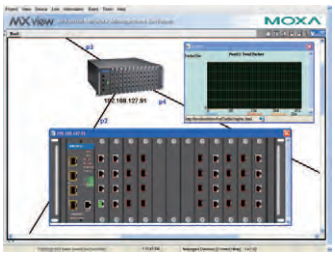
- Event Playback records network events, and replays past network incidents
- Discovers and visualizes network devices and physical connections automatically
- Provides central management of configurations and firmware for Moxa devices
- Supports third-party devices with MIB compiler and MIB browser
- Provides comprehensive reports, including inventory, traffic, and availability reports
- Generates OPC 2.0 compliant tags automatically to integrate with SCADA/HMI applications

Introduction

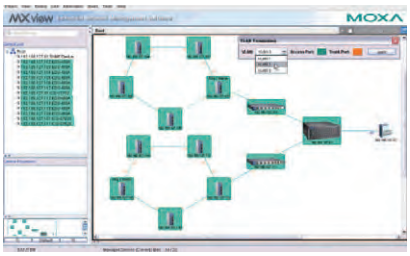
Moxa's MXview network management software is designed for configuring, monitoring, and diagnosing networking devices in industrial networks. MXview provides an integrated management platform that can discover networking devices and SNMP/IP devices installed in subnets. All selected network components can be managed graphically via web browser from both local and remote sites—anytime and anywhere.

Visualization

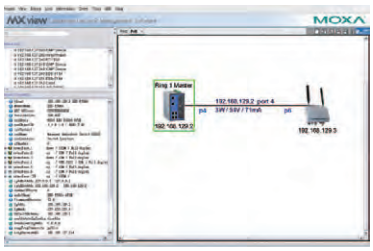
- Discovers up to 2,000 Moxa devices and SNMP/ICMP devices within scan range
- Visualizes redundant link status and device roles of network redundancy protocols
- Graphic VLAN groups and IGMP snooping roles visualization
- Device front panel visualization, including ports and LED indicators
- Visualizes managed PoE device power consumption
- Displays third-party device icons



Virtual Device Panel



VLAN Visualization

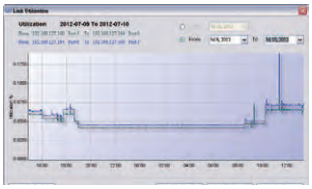


PoE Visualization

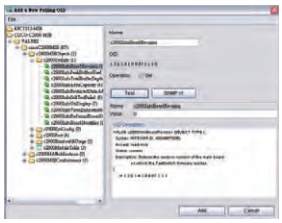
Network Diagnostics and Event Notification

- Event Playback records network events, and replays past network incidents
- Generate trend graphs to track bandwidth utilization and error packet rate statistics, accurate to four decimal points
- Detect problems in real-time with SNMP trap/inform, or periodic polling
- Configurable event notification alarms sent through SMS and email, or locally through program notifications and audio alerts
- Real-time device availability monitoring
- Supports third-party devices with MIB compiler and MIB browser
- Collaborates with third-party NMS through SNMP traps
- Generates OPC 2.0 compliant tags automatically to integrate with SCADA/HMI applications.

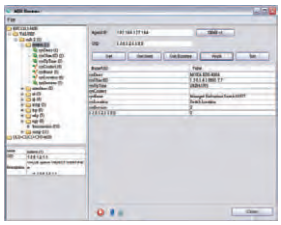
Event Playback



Traffic Monitoring



MIB Compiler



MIB Browser

Comprehensive Reports

- Maintains device availability reports and records for up to 90 days
- Generates an inventory report for each device in the network
- Compiles comprehensive device properties report
- Generates network traffic trend reports

Availability and Inventory Report

Centralized Configuration and Firmware Management

- Bulk deployment of device configurations and firmware
- In one click, back up the entire MXview database in one click, including topology, job scheduling, events, and device properties
- Scheduling for periodic configuration backup
- Save history of configuration changes
- Comparison tool for checking differences between 2 configurations

System Requirements

CPU	2 GHz or faster dual core CPU
RAM	2 GB
Hard Disk Space	10 GB
OS	Windows XP Professional, Windows 7 (32/64-bit), Windows Server 2008 (32/64-bit)
Browser	Internet Explorer 6/8/9

Ordering Information

Commercial Versions

MXview-2000: Industrial network management software with a license for 2000 nodes (by IP address)
MXview-1000: Industrial network management software with a license for 1000 nodes (by IP address)
MXview-500: Industrial network management software with a license for 500 nodes (by IP address)
MXview-250: Industrial network management software with a license for 250 nodes (by IP address)
MXview-100: Industrial network management software with a license for 100 nodes (by IP address)
MXview-50: Industrial network management software with a license for 50 nodes (by IP address)

Package Checklist

- MXview CD (includes the MXview software and related documents)
- License card

License Upgrade

MXview Upgrade-50: License expansion of MXview industrial network management software by 50 nodes (by IP address)

Trial Version

MXview Trial Version: A free trial version of MXview is available for download from Moxa's website

Supported Devices

MXview v2.3 supports the following devices by default.

Series	Model Name	Firmware
AWK Series	AWK-3121/4121	1.6 or higher
EDR Series	EDR-G902	1.0 or higher
	EDR-G903	2.1 or higher
EDS Series	EDS-405A/408A/505A 508A/510A/516A/518A/ G509/728/828	2.6 or higher
	EDS-608/611/616/619	1.1 or higher
	EDS-P506A-4PoE	2.6 or higher
	EDS-P510	2.6 or higher
	EDS-P510A-8PoE	3.1 or higher
EOM Series	EOM-104/104-FO	1.2 or higher
ICS Series	ICS-G7526/G7528	1.0 or higher
	ICS-G7748/G7750/G7752	1.2 or higher
	ICS-G7848/G7850/G7852	1.2 or higher
	ICS-G7826/G7828	1.1 or higher
IEX Series	IEX-402-SHDSL	1.0 or higher

Series	Model Name	Firmware
IKS Series	IKS-6524/6526/ 6726/6728	2.6 or higher
	IKS-6726-8PoE	3.0 or higher
	IKS-G6524	1.0 or higher
	IKS-G6824	1.1 or higher
PT Series	PT-508/510	3.0 or higher
	PT-7528	3.0 or higher
	PT-7710	1.2 or higher
	PT-7728/7828	2.6 or higher
	PT-G7509	1.1 or higher
TN Series	TN-5508/5510	1.1 or higher
	TN-5516/5518	1.2 or higher
	TN-5508-4PoE/ 5516-8PoE	2.6 or higher
ioLogik Series	ioLogik E2210/E2212/ E2214/E2240/E2242/ E2260/E2262	3.7 or higher
	ioLogik W5312	1.7 or higher
	ioLogik W5340	1.8 or higher
MGate Series	MGate 5102-PBM-PN	1.0 or higher

Series	Model Name	Firmware
NPort Series	NPort S8455/S8458	1.3 or higher
	NPort 5110	2.4 or higher
	NPort 5130/5150	3.4 or higher
	NPort 5210/5230/5232	2.6 or higher
	NPort 5410/5430/5450	3.9 or higher
	NPort 5600-8-DT/5650-8-DT	2.2 or higher
	NPort 5600	3.5 or higher
	NPort 5610-8-DTL/ 5650-8-DTL	1.1 or higher
	NPort 5110A/5130A/ 5150A/ 5210A/ 5230A/5250A	1.1 or higher
	NPort IA5150/IA5250	1.4 or higher
	NPort IA5150A/IA5250A	1.1 or higher
	NPort IA5450A	1.2 or higher
	NPort 6150/6250/6450	1.9 or higher
	NPort 6610-8/ 6610-16/6610-32	1.9 or higher
	NPort 6650-8/6650-16/6650-32	1.9 or higher
	NPort 5150AI-M12/ 5250AI-M12/ 5450AI-M12	1.0 or higher

Note: Additional model names will be added in the near future. Please check Moxa's website for the most up-to-date information.

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